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# INSTALLATION RESTORATION PROGRAM

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Final  
**DECISION DOCUMENT**  
**UST SITE 211**

117th Refueling Wing  
Alabama Air National Guard  
Birmingham Airport  
Birmingham, Alabama

January 1997



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The Installation Restoration Program was initiated by the Air National Guard (ANG) to evaluate potential contamination to the environment caused by past practices at its installations. During the 1987 Preliminary Assessment (PA), ten abandoned underground storage tanks (USTs) were identified at nine sites. During the 1991 Site Investigation, geophysical surveys located two areas believed to contain the USTs. Upon excavation, no USTs were found at either location south of Building 211. The report documents no further action need be taken at this the UST site.

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INSTALLATION RESTORATION PROGRAM

DECISION DOCUMENT  
SITE UST 211

117 AIR REFUELING WING  
ALABAMA AIR NATIONAL GUARD  
BIRMINGHAM AIRPORT  
BIRMINGHAM, ALABAMA

Submitted to:

AIR NATIONAL GUARD READINESS CENTER  
ANDREWS AIR FORCE BASE, MARYLAND

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HAZARDOUS WASTE REMEDIAL ACTIONS PROGRAM  
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for the  
U.S. DEPARTMENT OF ENERGY  
UNDER CONTRACT NO. DE-AC05-84OR21400

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JANUARY 1997

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## ACRONYMS

AANG	Alabama Air National Guard
ADEM	Alabama Department of Environmental Management
ANG	Air National Guard
ANGRC	Air National Guard Readiness Center
DOD	Department of Defense
DOE	Department of Energy
GPR	Ground Penetrating Radar
HAZWRAP	Hazardous Waste Remedial Actions Program
IRP	Installation Restoration Program
NGB	National Guard Bureau
PA/SI	Preliminary Assessment/Site Investigation
RD/RA	Remedial Design/Remedial Action
RI/FS	Remedial Investigation/Feasibility Study
SI	Site Investigation
UST	Underground Storage Tank
VOC	Volatile Organic Compound

## EXECUTIVE SUMMARY

As part of the Installation Restoration Program (IRP), the Air National Guard Readiness Center (ANGRC), previously known as the National Guard Bureau (NGB), and Alabama Air National Guard (AANG) requested field observation and sampling during the removal of Underground Storage Tank (UST) 211. The investigation was begun to determine the presence or absence of contamination and the risk to public health and environment, if any, associated with past operations at this site.

This document was prepared to review the available data, to evaluate alternative actions, to make recommendations concerning future action, and to fulfill the requirements and objectives of the National Environmental Policy Act.

The UST 211 site was investigated during the field survey task, and two areas that were believed to contain USTs were found. These areas were excavated during the tank removal project, but no tanks were found.

The Alabama Department of Environmental Management (ADEM) issued a letter in May, 1991 stating that it would not require further action at this site. Because no UST was found, it is recommended that this site be removed from further IRP activities and that no further action be required.

## 1. INTRODUCTION

The objectives of the Decision Document are to present the history of Underground Storage Tank (UST) 211 at Birmingham's Alabama Air National Guard (AANG) facility, to discuss observations made while investigating the tank, and to present conclusions and decisions about the disposition of each UST site. Decisions are based on regulations set forth in the site investigation (SI) work plan dated November 1989.

Figure 1 shows the general location of AANG facility in Birmingham. Figure 2 shows the specific location of UST 211 on the base. Evaluations are based on criteria set forth in the Site Investigation Work Plan, Alabama Air National Guard (CH2M HILL, Inc., November 1989).

## 2. BACKGROUND

### 2.1 PROGRAM BACKGROUND

The Air National Guard Readiness Center (ANGRC), through the Air National Guard (ANG), initiated an Installation Restoration Program (IRP) in response to the policies of the Department of Defense (DOD). The IRP was developed as a phased program for identifying and addressing environmental contamination caused by past practices at ANG installations.

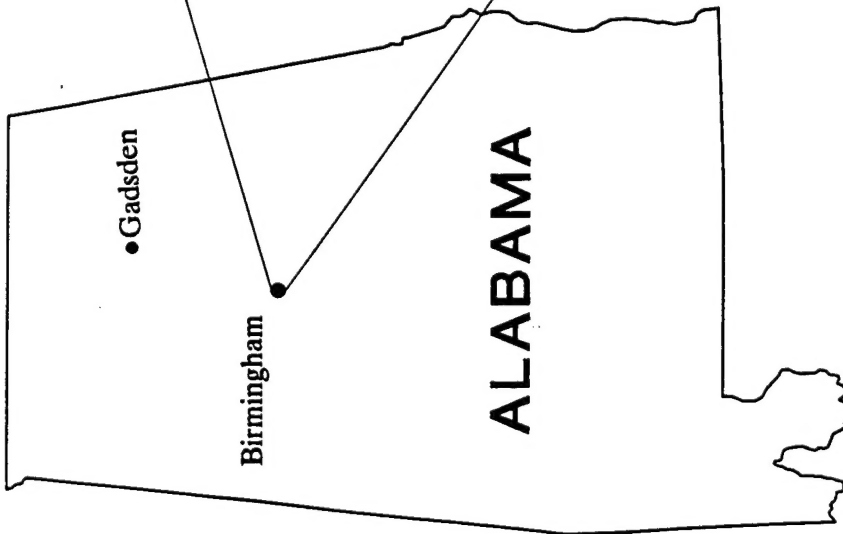
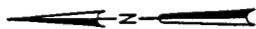
As a part of the IRP, the ANGRC entered into an interagency agreement with the Department of Energy (DOE), under which the DOE will provide technical assistance for implementing this program. The Hazardous Waste Remedial Actions Program (HAZWRAP), as a DOE contractor, is responsible for managing this effort under the interagency agreement.

The IRP, along with other national hazardous waste cleanup programs, follows the terminology and procedures of the National Contingency Plan:

- PA/SI Preliminary Assessment/Site Investigation
- RI/FS Remedial Investigation/Feasibility Study
- RD/RA Remedial Design/Remedial Action

This Decision Document is written to provide the basis for the decision not to do any further work.

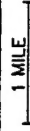


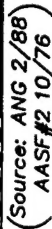


VICINITY MAP  
N.T.S.



LOCATION MAP





**FIGURE 2**

## 2.2 SITE DESCRIPTION

The 117th Tactical Reconnaissance Wing is located next to and north of the Birmingham Municipal Airport, Birmingham, Alabama. This AANG installation has been active at its present location since 1938. Through the years, the base has had several missions, with past and present operations involving the use of USTs for containment of heating fuels, diesel fuels, and jet propulsion fuels.

UST 211 was assumed to be a gasoline tank based on information found during the initial investigation of the AANG facility. Tank age could not be determined from base records, but the estimated last use was in 1946. Figure 3 shows the UST 211 site map.

## 2.3 ENVIRONMENTAL SETTING

### 2.3.1 Geology

The bedrock beneath the Base consists of the Ketona Dolomite and Knox Group. A mottled-colored cherty clay residuum, resulting from the dissolution of the bedrock, overlies dolomites of these units and averages 30 feet in thickness over the base. Some areas of the Base have visible outcrops of dolomite and chert boulders which are isolated in the clay residuum; chert float can be seen at the surface base-wide.

The residual cherty clays are generally homogeneous, although slight changes in the amount of chert, plasticity and stiffness are present. Dolomitic sand lenses are gravelly clays are present, generally occurring at the contact of clay and bedrock.

### 2.3.2 Hydrogeology

The uppermost aquifer at the Base is the Knox aquifer. The top of the aquifer is the saturated permeable interface between the residual clay and the bedrock. The clay materials above the bedrock are also generally saturated at shallow depths, 10 to 15 feet below land surface. These clays generally do not yield significant quantities of water.

The direction of groundwater flow in both the clay residuum and the Knox is to the south; a downward vertical component exists in the clay residuum. Data from slug testing of monitoring wells completed in the clay indicate an average hydraulic conductivity of  $9.02\text{E-}4$  ft/day. Because of the low permeabilities exhibited by the residual clays, lateral transport is inhibited.

### 2.3.3 Water Utilization

Drinking water in the Birmingham is provided by city/county utilities from surface water sources. The municipal water source nearest the Base is the Cahaba River, located approximately 20 miles to the east. Residences adjacent to the Base have been served by the municipal water system for about 60 years.

## 2.4 TANK REMOVAL OBSERVATIONS

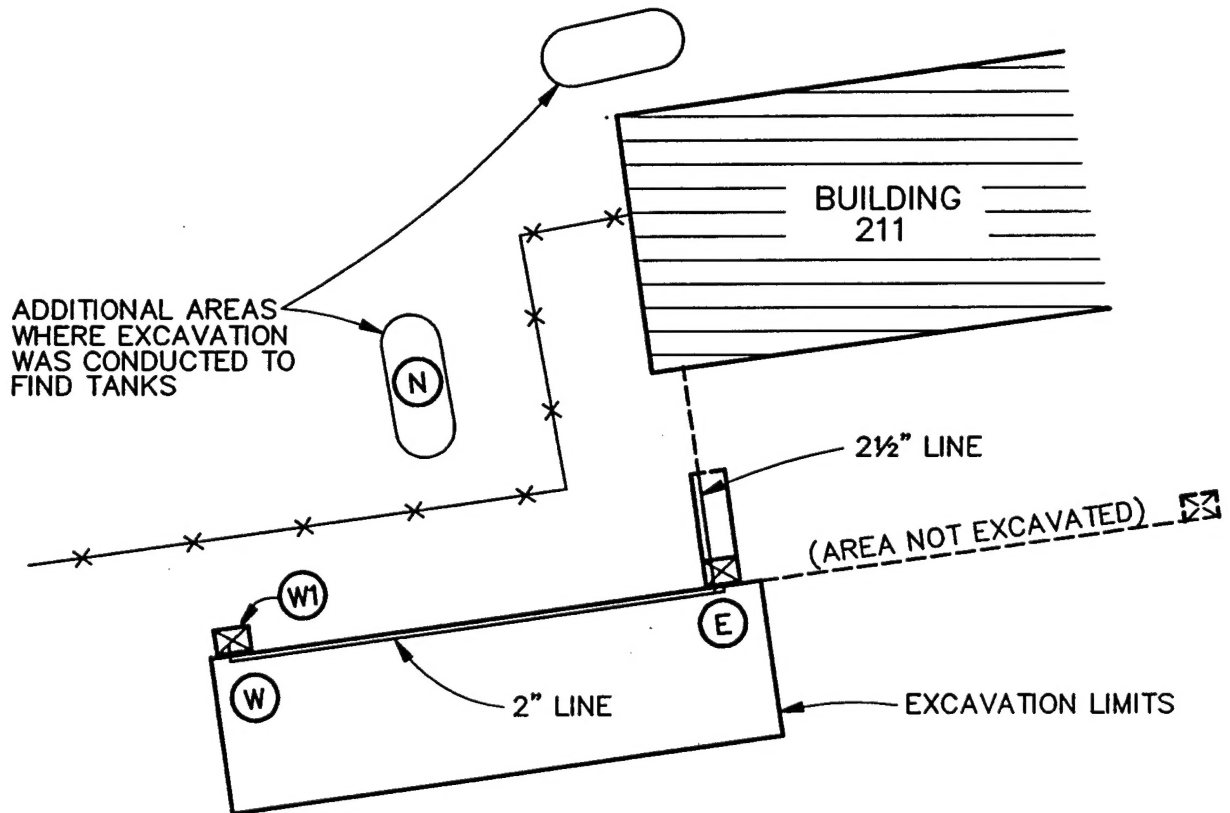
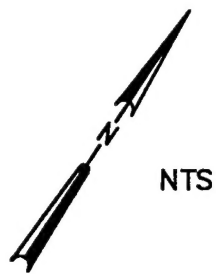
A program to evaluate abandoned USTs at the Birmingham AANG facility included identifying abandoned tank locations, sampling tank contents, preparing tank removal plans and specifications, removing tanks and contaminated soil, and evaluating investigation-derived wastes after the removal effort was complete.

During the Tank Survey Task to identify the location and sizes of the tank, magnetic devices and Ground Penetrating Radar (GPR) were used to identify tank boundaries and sizes. Two areas found during this task were believed to contain USTs. Hand augering to verify the tanks was not possible because of overlying concrete and asphalt.

Further review of aerial photography and base records revealed minimal information about the UST 211 site. UST 211 was included in the UST removal project.

Excavation for the tanks was performed in January 1991. The asphalt and concrete were removed and soil was excavated to a depth of 5.5 feet, to the top of the shallow rock formation. There was no indication of tanks. A 2" diameter line was found on the north side of the excavation and a 2½" diameter fill line was traced and found to extend under Building 211. Additional excavation was conducted on the north and west sides of Building 211 and no evidence of a UST was found. Because shallow rock formations are present in the area, it is expected that the tank was located aboveground.

Three soil samples were taken from the excavations at the UST 211 site. These soil samples did not indicate the presence of fuel component organic compounds. In addition, field screening tests (headspace readings) were conducted with a photoionization detector, manufactured by HNu systems, to screen the soils associated with the fuel systems. Soil samples were placed in glass jars and covered with foil to create a headspace in the top half of the jar. The HNu probe was inserted through the foil cover into the headspace, approximately 5 minutes after sampling, to indicate if any volatile organic compounds (VOCs) were present in the soil sample.



- DENOTES SAMPLE LOCATION
- ⊠ OLD PUMP ISLAND LOCATIONS

HNu HEADSPACE READING	
LOCATION	(ppm)
211-N	5.0
211-E	1.2
211-W	2.0
211-SP	-
W-1	170

**FIGURE 3**  
UST 211 SITE MAP  
Alabama Air National Guard, Birmingham, Alabama



### 3. CONTROL MEASURES

Because UST 211 was not found, control measures used to consider the adverse effects from potential contamination were not considered for screening, identification, and evaluation.

### 4. CONCLUSIONS

Past operations at the UST 211 site led to this investigation because of possible soil and water contamination. A field survey task used to identify the UST's location did not reveal the presence of a UST at this site. On the basis of information found during the UST removal project, it is believed that the UST was previously removed or that the UST exists under Building 211. Discussions with Alabama Department of Environmental Management (ADEM) field personnel indicated that no additional excavation would be required. ADEM documentation is included in the Appendix.

Because no UST was found and soil samples collected did not contain fuel contamination, it is recommended that this site be removed from further IRP activities and that no further action be required.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**DAVID C. VAN GASBECK**  
Chief, Environmental Division  
Air National Guard Readiness Center

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Alabama Department of Environmental Management**

**Appendix**  
**ADEM Response to Closure Assessment Report**

# ADEM

## ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



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May 8, 1991

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Dear Colonel Copeland:

RE: 117th Recon, East Lake Boulevard, Birmingham, Jefferson County, Alabama  
Facility Not Registered  
UST380, 211A and 211B

The Department has reviewed the underground storage tank closure assessment for the referenced site. As a result of this review it is determined that no further investigative or corrective actions will be required for this site at this time.

Please use a complete reference line in all future correspondence, including Facility Identification Number, name, address, and Incident Number (UST - - ), where applicable. Sites that are not registered will not have an Identification Number and should be labeled (NOT REGISTERED). Because our filing system is dependent on the use of the Facility Identification Number, we may have to return correspondence and reports that do not provide this information.

If there are any questions, please contact me at 205/271-7835.

Sincerely,

Thadous W. Pittman  
Environmental Scientist  
Groundwater Branch  
Water Division

TWP/cmh